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ABSTRACT

Intended for persons interested in further investigation of training programs and students or others contemplating careers in the health occupations, this report contains information gathered through: (1) surveys of institutions conducting health occupations training, (2) reviews of school catalogs, brochures, national publications, and research reports, and (3) personal interviews with representatives of some institutions. The survey questionnaire sought information pertaining to program length, enrollment figures, completion figures, enrollment predictions, and affiliation with other facilities or institutions. Sections of the report contain: (1) available degrees in health careers along with descriptions of over 40 training programs, institutions offering the training, entrance requirements, program length, certificate or degree awarded, affiliations, and tuition, (2) enrollment and graduation figures, and (3) sources of financial aid for students. (SB)

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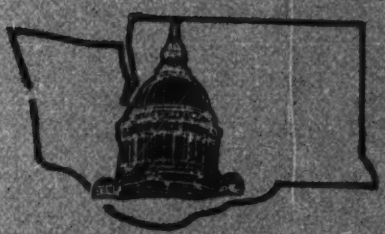

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HEALTH CAREERS

A REPORT ON TRAINING PROGRAMS

IN THE STATE OF WASHINGTON

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This report was prepared by the Health Manpower Project and funded by HEW Contract #NIH 71-4018, Ilse J. Volinn, Ph.D., Administrator, Health Manpower Project, Division of Health.

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A NOTE ABOUT THE HEALTH MANPOWER PROJECT

The Health Manpower Project is part of the Division of Health, Department of Social and Health Services, State of Washington, and has been engaged for over three years in collecting information about various health professions and occupations. This information has been distributed through reports that are available in the State Library in Olympia. The staff for the project has attempted whenever possible to give assistance to other investigating agencies and individuals in Washington and many other states on questions concerning training programs and supply of health manpower.

The purpose of this report is to provide, in one document, two types of information that may be used by persons interested in the further investigation of training programs and students or others contemplating careers in the health occupations. In addition, it may provide a base for periodic review of the health training programs and for a formal health careers handbook that could be used for counseling purposes.

SECTION I

INTRODUCTION

The Health Manpower Project has gathered data from schools, colleges, universities, vocational-technical institutes, private vocational schools, and hospitals on their health careers training programs. Within the scope of this phase of the project, educational programs have been investigated through the use of questionnaires, catalogs, and brochures supplied by the various institutions. Personal calls were made to clarify information received whenever necessary. The results of this investigation have been assembled into this report, which does not assume to cover all the possible educational opportunities in the health field.

The field of education has experienced tremendous growth within the last two decades. Associated with the changes in industry and technology has been the development of education in medical care and allied health. The increase in the number of educational institutions offering training in the health occupations has been particularly striking. The community colleges and the vocational-technical institutes have been the focus of such growth. The number of community colleges in the State of Washington has increased from 9 in 1960 to 24 in 1970; most are offering technical training previously unavailable.

Compared to community colleges which have grown in numbers, the growth in the professional schools, colleges and universities has occurred in the number of programs offered and the special emphasis in the existing programs.

Many of the programs currently offered are new and experimental. They are not only offered within educational institutions but also in health facilities. A number are conducted on a cooperative basis.

Many of the tasks performed by professionals twenty years ago are now performed by technicians operating under the guidance of professionals. Graduates of professional programs today often do not perform tasks directly, but are involved in supervision and administration related to patient care. In the health occupations, there has been a consequent increase in the number of short-term continuing education courses demanded and needed by professional and allied workers in the community. Medical facilities and educational institutions, particularly the community colleges, have expanded their programs for continued training.

According to Michael Pilot,[1] the total health care manpower demand will increase from 3.9 million in 1968 to 6.35 million in 1980. Additional workers will be needed to fill positions vacated by attrition factors such as retirement, temporary withdrawal from the labor force, (marriage, child bearing, etc.) and death. In order to increase the supply of health manpower, the Federal Government has embarked on a program designed to aid schools in such things as curriculum planning and innovation, the building of new training facilities, financial aid to their students, and in the upgrading of present personnel with funds for in-service training or continuing education programs. For complete information on these and other programs sponsored by the Federal Government, contact your regional office of the Department of Health, Education and Welfare.

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[1] Occupational Outlook Quarterly, Michael Pilot, Vol. 14, No. 4 Winter, 1970 Health Manpower in 1980

EXPLANATION OF PROFESSIONAL PREPARATION

In general, all health occupational training programs required a high school completion certificate (diploma or a General Equivalency Diploma). There are, however, many programs of on-the-job training and continuing education where this certificate is not required, or if it is, can be obtained during the course of the training. There is a great deal of flexibility in the community college programs wherein an individual may attend classes on a part time basis and maintain employment at the same time. In this case, the time required to complete the study period will, of course, be much longer than for the full time student.

Certification in some cases may imply approval by one or more professional organizations and in other cases refer to the completion of a certain course of study. Wherever possible, we have indicated this difference.

Degree programs are usually of four distinct types: 1) Associate of Applied Arts or Sciences, granted upon completion of most two-year occupational programs; 2) Bachelor of Arts or Sciences, usually in a particular field, granted by four-year colleges and universities after completion of a planned program, normally four years in length; 3) Professional degrees, (M.D., D.D.S., D.V.M., etc.) granted by professional schools upon completion of a specific program which generally includes some internship or externship; 4) Graduate degrees, (M.A., Ph.D., etc.) granted by universities and some colleges upon completion of a planned program which generally includes research in a specialized area. In addition to the four generally mentioned above, Community Colleges in the state grant an Associate of Arts or Sciences Degree, indicating

the eligibility of the student to transfer to a four-year institution to complete his education. Diploma nursing certificates are available through hospital programs in nurse training. Further information concerning a specific degree program may be obtained by contacting the school offering the training desired.

METHODS OF DATA COLLECTION

Information for this report was gathered through the following methods:

a. Surveys of institutions conducting health occupation training

b. Perusal of school catalogs and brochures

c. National publications and research reports

d. Personal interviews with representative of some institutions.

The survey for this report was conducted in three parts. The first consisted of a questionnaire mailed to four year colleges and universities, community colleges, vocational-technical schools, public school districts and high schools that conduct health career training programs. Of the 48 questionnaires mailed to this group and one follow-up letter, 83 percent of the institutions responded.

Secondly, in December of 1970, a survey of all 118 licensed hospitals in the State of Washington was conducted. This survey was co-sponsored by Washington State Hospital Association and the Health Facilities Licensing Section of the Division of Health. Personal phone call follow-ups were conducted when necessary. A 100 percent return rate was experienced. One section of the total questionnaire was concerned with the educational programs conducted by the hospitals. Many of the hospital programs are co-sponsored with the educational institutions in the State.

Finally, the private vocational schools that have health career training programs were surveyed. Of the 25 schools surveyed, 62 percent responded.

Information gathered on the survey form includes:

a. Length of training program

b. Enrollment figures for 1969-70 and 1970-71

c. Student completion figures for 1960, 1969 and 1970.

d. Predictions of future enrollments for 1975 and 1980

e. Affiliations with other facilities or institutions.

When necessary, other information for this report was taken from the school catalogs and brochures. These publications were particularly valuable for the institutions that did not reply to the survey questionnaires. Also, information on tuition, type of certificate or degree, and entrance requirements was available through this source.

National publications and research reports listed in the bibliography, supplied information on the professional programs and student financial aid. Some of these publications are available, free or for a modest fee, and the cost and source is listed in the bibliography.

This report does not begin to cover all of the opportunities available in the health career field. For every professional or technical worker that is formally trained in a program in a college, school or health facility, there are many who are trained, retrained, or up-graded in their position with the aid of on-the-job instruction. Some of this training is carried out on an informal basis. Many continuing education programs are sponsored by the respective professional associations. This report does not include discussions of continuing education because information has not been gathered in detail on these programs.

The following subjects were covered in this report: descriptions of programs; listing of the institutions offering specific programs; enrollment and graduation figures; and information concerning finamcial aid for students contemplating a health career.

SECTION II

HEALTH CAREER TRAINING PROGRAMS

Section II contains the available degrees in health careers, descriptions of the training programs and a listing of the institutions by program, and the institutional names and addresses. Included are programs provided by four year colleges and universities, community colleges and vocational-technical institutes, public school districts and high schools, private vocational schools, and hospitals.

The various training programs and the availability of degrees or certificates obtained upon completion are indicated for each program and listed on Table I. All of these programs are available in the State of Washington. Training programs of less than two years have the shortest acceptable training period indicated in parentheses.

TABLE I

TRAINING PROGRAMS IN HEALTH OCCUPATIONS IN THE STATE OF WASHINGTON AND THE AVAILABILITY OF DEGREE OR CERTIFICATE UPON COMPLETION

TYPE OF PROGRAM	LEVEL					
	Less than 2 years	Associate Degree	Baccalaureate Degree	First Professional	Master's Degree	Doctor of Philosophy
Bacteriology			Avail.[1]		Avail.	Avail.
Biochemistry			Avail.		Avail.	Avail.
Biophysics			Requid.[2]		Avail.	Avail.
Statistician (Biomathematics)					Avail.	Avail.
Biomedical Photography		Avail.				
Cardiopulmonary Technology		Avail.				
Central Service Technician	Avail. (6 mos.)					
Clinical Psychologist			Requid.		Avail.	Avail.
Dentist			Pref.[3]	DDS	Avail.	
Dental Assistant	Avail. (9 mos.)	Avail.				
Dental Hygiene		Avail.	Avail.			
Dental Laboratory Technology		Avail.	Avail.			
Dietician		Avail.	Avail.		*	*
Environmental Health			Avail.		Avail.	Avail.
Food Service		Avail.	Avail.		Avail.	Avail.
Health Education			Avail.		Avail.	Avail.
Hospital Executive Housekeeper			Avail.		*	*
Inhalation Therapy	Avail (11 mos.)					

*Available in related fields

1. Available - indicates that the training program may be terminated at that point and employment is possible.
2. Required - indicates that this degree or certificate level must be obtained prior to entering the formal training program.
3. Preferred - indicates that this degree or certificate level is preferred by the professional training institution prior to admission, but is not required.

TYPE OF PROGRAM	LEVEL					
	Less than 2 years	Associate Degree	Baccal-aureate Degree	First Profes-sional	Master's Degree	Doctor of Philosophy
Laboratory Assistant	Avail.[1] (11 mos.)	Avail.				
Medical Assistant	Avail. (7 mos.)					
Medical Librarian			Avail.			
Medical Record Librarian			Avail.			
Medical Record Technician	Avail. (9 mos.)	Avail.				
Medical Secretary	Avail. (9 mos.)	Avail.				
Medical Technology		Avail.	Avail.			
Mental Health Technician		Avail.				
Mental Retardation Technician		Avail.				
Nurse (R.N.)		Avail.	Avail.		Avail.	*
Nurse (LPN)	Avail. (10.5 mos.)	Avail.				
Nursing Unit Clerical Asst.	Avail. (4 mos.)					
Occupational Therapy			Avail.		*	*
Occupational Therapy Asst.		Avail.[2]				
Pharmacy			Avail.		Avail.	Avail.
Physical Therapy			Avail.		*	
Physical Therapy Assistant		Avail.				
Physician				M.D.	Avail.	Avail.
Recreation Therapist			Avail		*	*
Social Work			Avail.		Avail.	Avail.
Speech Pathology and Audiology			Avail.		Avail.	Avail.
Surgical Technician		Avail. (6 mos.)				
Radiologic Technology		Avail	Avail.		*	*
Veterinary Medicine			Pref.[2]	DVM	Avail.	Avail.
Veterinary Assistant		Avail.				

HEALTH CAREER DESCRIPTIONS

Following are brief descriptions of those health careers for which training is available in the State of Washington.

BACTERIOLOGY (MICROBIOLOGY): A four year course of study leading to a Bachelor of Science degree. The program prepares the student to study microscopic organisms, their biological characteristics, chemical activities, and producing mechanisms. Advanced degrees are available with specialization in general and medical bacteriology, microbial physiology and genetics, immunology, virology, and medical mycology. High level performance as an undergraduate is necessary to enter the graduate programs.

BIOCHEMISTRY: A Baccalaureate and graduate course designed to acquaint graduate students in chemistry with the ever-widening branches of the biological sciences. Both the Master's Degree and the Doctor of Philosophy are available in Biochemistry.

BIOPHYSICS: A graduate program emphasizing the physical aspects of organs and control systems using methods developed by physicists.

BIOMEDICAL PHOTOGRAPHER: A two year program leading to an Associate of Applied Arts degree, which trains individuals in methods of photography that will enable the doctor or other scientist to better communicate with his colleagues and his public. Media such as television, still photographs, and films, both slides and moving pictures, are used for these purposes.

BIOSTATISTICIAN (BIOMATHEMATICS): A program to train research and statistical personnel to aid the physician and medical research team in the investigation of health problems. Training in the mathematics field with concentration in Statistics and some biological sciences may take the place of a Bio-Mathematics major. Graduate programs in this field are available.

CARDIO PULMONARY TECHNOLOGY: A program designed to acquaint the student with basic knowledge of sterile field techniques and the care of surgical instruments and catheters. Also, to provide instruction in all types of gas and blood gas analysis, tabulation techniques of the results of cardiac catherization. Supervised clinical experience is provided.

CENTRAL SUPPLY TECHNICIAN: A six-month program designed to train and develop students in the methods of sterilization, disinfection, inventory control, and packaging. The courses will include medical terminology, basic microbiology, and chemistry.

CLINICAL PSYCHOLOGY: A program leading to the baccalaureate degree, available in most of the State's four year institutions. Those interested in human behavior as a health factor will find it most beneficial to continue beyond the bachelor's degree to the doctor of philosophy. The basic program provides a good foundation in all aspects of human behavior and provides clinical experience in many varied areas. Since research is an essential part of the psychology program, statistics and research design are integral parts of the program.

CYTOLOGIC TECHNOLOGY: A program to train persons to analyze slides to determine the absence or presence of cancer. Usual length of the program is six to twelve months.

DENTIST: After a two to four year preprofessional program, students enter a four year Dentistry program. Dentists are concerned with the teeth, oral cavity, and associated parts, including diagnosis and treatment of their disease and restoration of defective and missing teeth and tissue. Specialization in orthodontics, prosthodontics, oral surgery, peridontics, pedodontics, endodontics, or oral pathology may be undertaken in the graduate programs.

DENTAL ASSISTANT: A training program of nine or ten months duration where students are trained to directly assist the dentist in technical and chair-side duties. These duties may include patient dental education, removing sutures, applying sodium fluoride treatment, preparing and mixing material, sterilizing instruments, exposing and developing X-rays, assisting in surgical procedures, constructing dental models, waxing and casting dental restorations, office billing typing, record keeping and receptionist responsibilities.

DENTAL HYGIENIST: A program two years in length at the community college and a four year program including two years of predental hygiene at the colleges and universities. Either an Associate of Applied Arts degree or a Baccalaureate degree can be attained. The training program helps develop skills in prophylaxis (or cleaning), applying fluorides to prevent dental decay, helping the dentist to detect early signs of disease, taking X-rays of teeth, and instructing the patient in proper oral health.

DENTAL TECHNOLOGY: A program to train dental laboratory personnel. During the two year program, a student will develop skills in constructing casts or bridges or other prostheses, as well as an understanding of the theory and principles involved in these processes.

DIETICIAN: A program in the principles of nutrition and management of menu planning including purchase, preparation, and the service of the food. In addition to a baccalaureate degree in nutrition, one year internship must be served to meet the standards set by the American Dietetic Association for registration as a Registered Dietician (R.D.).

ENVIRONMENTAL HEALTH: A relatively new program designed to give potential workers a broad background of technical knowledge in order that they may be able to evaluate environmental conditions and suggest methods of modifying those conditions that are detrimental to the health of mankind. A four year program leading to the Baccalaureate Degree is possible, with further work leading to a Master's and Doctorate Degree in Environmental Science available.

FOOD SERVICE SUPERVISOR: A two year program designed to prepare persons to aid the Dietician or Nutritionist in the preparation and service of food in the hospitals.

HEALTH EDUCATION: Programs training persons to aid communities and individuals in developing awareness of public health needs. Generally a baccalaureate degree program, but advanced degrees are necessary for most positions. Graduate work that does not terminate in a degree may often be substituted.

HOUSEKEEPING, EXECUTIVE: A program within the Home Economic departments of some colleges which trains students in the maintenance of standards of cleanliness work methods, the hiring and training of houskeeping personnel and scheduling.

Some institutions do not require the baccalaureate degree, but prefer experience or a degree in another field such as Business Administration. Because of the higher levels of technology in this field, the bachelor of science degree may be required in the future.

INHALATION THERAPY: A two year, Associate Degree program which trains therapists to aid the physician in the administration of oxygen, aerosilized solutions and medications, and with lung physical therapy. The operation of the various machines that assist or control respiration, plus the theories involved are an important part of the program. A one year program is available for Inhalation Therapy Assistants.

MEDICAL ASSISTING: This program varies in length from one to a two year associate degree program. Training in the methods of assisting the physician in his office in the examination of patients, performing diagnostic tests, and routine laboratory procedures, as well as scheduling patients, taking medical histories, handling patients records, receiving and placing telephone calls, and many other office duties are part of the program.

MEDICAL LABORATORY ASSISTING: A course consisting of subject matter and clinical experience designed to prepare a person to work with the Medical Technologists, Clinical Pathologists, and Physicians in clinical laboratory settings. While the program may vary in length from one to two years, a minimum of 100 clock hours must be completed in order to qualify for Certification as a Laboratory Assistant, (C.L.A.).

MEDICAL LIBRARIAN: A program to train specialists in medical literature. Training includes methods of selection and cataloging, compiling of bibliographies, preparation of reference material and supervising assistants in nonprofessional procedures.

MEDICAL RECORDS:

LIBRARIAN: A four year program in the handling of medical records including the organization and management of the files. Training includes statistics and preparation of research materials used by medical researchers.

TECHNICIAN: A two year Associate Degree program. Training includes methods of statistical research medical coding of diseases and operations.

MEDICAL SECRETARIAL AND OFFICE WORKERS: Training programs for medical secretaries and other office workers such as billing clerks, receptionists, are offered in many community college vocational-technical schools, public high schools, and private vocational schools. These programs vary in length and in the types of skills taught. Many of the office personnel have not been specifically trained for the health field, rather in general office procedure, and have adapted this training to the medical office routine.

MEDICAL TECHNOLOGY: A program that prepares the student to work under the direction of the physician in the laboratory setting. Methods used in laboratories to track down the causes and cures of diseases by performing scientific fact-finding tests in the clinical laboratory by chemical means, are emphasized.

Specialty areas may be pursued. This four-year program includes at least one full year of clinical experience in a school approved for training by the American Medical Association. Master's degrees are available for those desiring to specialize or enter administration.

MENTAL HEALTH:

MENTAL HEALTH TECHNICIAN: A program designed to prepare technicians in methods of assisting the professionals in mental health, using group processes, individual counseling, and other basic treatment methods for mental illness in specific areas such as psychiatry, nursing services, social services, psychology, and rehabilitation. The program is two years in length and graduates receive an Associate degree.

MENTAL RETARDATION TECHNICIAN: This associate degree program is designed to prepare workers to assist the professionals in the field of mental retardation. Many courses in general education are required with additional courses in the behavioral sciences and in methods of working with mentally retarded persons.

NURSING: This program develops abilities in students in order that they may take the responsibility for direct patient care, assisting the physician in administering treatments and medications, planning and coordinating the nursing care, and supervision of other nursing personnel. Many nurses specialize in medical, surgical, obstetric, pediatric, and psychiatric nursing. Some qualify for teaching, while others find public health nursing a rewarding field. Opportunities exist not only in hospitals but in public health, education, industry, private care, and government service. (Special Note): Nursing, in the State of Washington, has three levels of preparation: Baccalaureate, Associate Degree, and diploma programs. In addition, Licensed Practical Nurses and Nurses Aides are trained by various institutions.)

BACCALAUREATE NURSING PROGRAMS: In general, students entering as freshmen, spend one year in a general college program and progress to the clinical training the following year. Many nurses who have completed a two year Associate Degree program transfer into the four year program and progress somewhat differently toward a Bachelor of Science degree.

ASSOCIATE DEGREE PROGRAMS: A two year program designed to impart the necessary skills for nursing in all general nursing areas.

DIPLOMA PROGRAMS: These programs prepare nurses in hospital setting generally with opportunities for enough employment for the student to offset some of the costs of the education. The diploma program is normally three years in length.

VOCATIONAL NURSING (LICENSED PRACTICAL NURSING): A nursing program of one year in length, concentrating on the patient care in hospitals and clinical settings. LPN's work under the supervision of physicians or registered nurses.

NURSES ASSISTANT (AIDE/ORDERLY): A program designed to prepare aides to assist Registered Nurses and Licensed Practical Nurses in patient care. Some of these health workers are trained in High School programs, while others are trained in hospitals and vocational-technical institutes.

SURGICAL TECHNICIAN: A program of short duration either in a community college or in the hospital, training includes methods of setting up operating rooms, assisting the physician during major and minor operations, and help in post operative care.

NURSING UNIT CLERICAL ASSISTANT (WARD CLERK): The training program for unit clerks is usually on-the-job training; however, persons with good high school backgrounds in the business or commercial areas are given preference.

PHARMACY: A four year program plus one year of preprofessional general education courses. Five special areas of study are possible, although most students have some knowledge of each area. Pharmacy, dealing with compounding; pharmaceutical chemistry, the principles of chemistry applied to the problems of pharmacy; pharmacognosy, the study of drugs of natural origin; pharmacology, the study of the action of drugs; and pharmacy administration, the study of the business, including the laws of pharmacy.

PHYSICIAN: The program provides the student with a solid foundation for future development and an opportunity to learn the basic principles applicable to the whole body of medical knowledge. "... An opportunity for the student to achieve five mutually interdependent objectives: (1) basic professional knowledge, (2) good habits of self education, (3) basic clinical and social skills, (4) sound attitudes, and (5) an understanding of professional and ethical principles. Specialization and continuing education programs are available in the following areas: Anesthesiology, Neurological Surgery, Obstetrics and Gynecology, Opthamology, Orthopedics, Otolaryngology, Pediatrics, Physical Medicine and Rehabilitation, Psychiatry, Radiology, Surgery, and Urology.

RADIOLOGIC: Including Technology, Technician, Radioisotope Technician, and Nuclear Medicine Technician programs.

RADIOLOGIC TECHNOLOGY: Sometimes titled X-ray technology, this program prepares students in the areas of X-ray equipment operation, including deep therapy units and linear accelerators. Generally the program is two years in length with an Associate of Applied Arts degree awarded. There are in other states programs leading to a baccalaureate in Radiologic Technology.

RADIOLOGIC TECHNICIAN: A program designed to train assistants for the physician and radiologic technologist. The program may be two or more years in length depending on the number of months of clinical training involved.

RADIOISOTOPE TECHNICIAN: A program to train persons in X-ray therapy. This program may run one or two years in length depending on the amount of clinical experience involved.

NUCLEAR MEDICINE TECHNOLOGY: Training program for specialized personnel in the use of nuclear materials in diagnosis and treatment. In Washington State, the program is one year in length and involves a great deal of clinical experience.

REHABILITATION: Including Occupational Therapy, Occupational Therapy Assisting, Physical Therapy, Physical Therapy Assisting and graduate programs.

OCCUPATIONAL THERAPY: A four year program with the first two years in a preprofessional program, similar to the Physical Therapy program. Along with the theories of rehabilitation, students learn methods of teaching useful activities in order that they may aid patients to lead healthful and rewarding lives.

OCCUPATIONAL THERAPY ASSISTING: A two year community college program leading to an associate of applied arts degree. The program trains assistants for the occupational therapist in the patient care involving occupational and avocational activities.

PHYSICAL THERAPY: A four year Baccalaureate program involving studies of human anatomy and physiology with special emphasis on the musculo-skeletal and nervous systems, along with basic studies in pathological physiology and medical sciences. Students generally take two years in a preprofessional program and enter the advanced program the third year.

PHYSICAL THERAPY ASSISTING: A two year community college program in which individuals are trained to assist the physical therapist in the rehabilitation of patients in order that they may utilize their physical abilities to attain greater independence.

GRADUATE PROGRAMS IN REHABILITATION: This program is an extension of the baccalaureate programs in Physical Therapy and Occupational Therapy listed above. The Master's program in Physical Medicine and Rehabilitation prepares therapists in special diagnostic procedures and evaluative processes.

SPEECH PATHOLOGY AND AUDIOLOGY: A master's degree is the minimum requirement for certification by the American Speech and Hearing Association. This certification is necessary for most positions in the area of speech and hearing. Programs at the graduate level include many hours of clinical experience as well as theory and research.

VETERINARIAN: A program designed to train students to fill positions in the veterinary profession. Graduates will find employment in areas such as: private practice; U.S. Public Health Service; federal and state disease regulatory programs; and research, among others. Six years of formal instruction plus one six week summer session are required to obtain a Doctor of Veterinary Medicine degree. One to three of these years can be preprofessional training; however, only one year can be completed without some courses in Veterinary Science. Advanced degrees at the Master's and Doctor of Philosophy level are available.

VETERINARY ASSISTANT: (Animal Technician): A program designed to train veterinarian technicians to assist the veterinarian in a broad scope of duties. The program leads to an associate of applied arts degree. Courses in biological sciences, pathology, genetics, and breeding, client relations, office procedures, X-ray techniques, as well as some courses in mathematics, English, and Chemistry are required in this program.

HEALTH CAREER TRAINING PROGRAMS LISTED BY INSTITUTION

The following list contains the training programs in health occupations and the institutions offering them. Wherever the information was available, the type of certificate or degree, the entrance requirements, the length of the training and clinical affiliations are reported.

PROGRAM	TYPE OF DEGREE OR CERTIFICATE	BASIC ENTRANCE REQUIREMENTS	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	ANNUAL TUITION	COMMENTS AND AFFILIATIONS
BACTERIOLOGY	BS	High school graduation	Univ of Washington	4 years	$432	See footnote 1
	BS	" "	Washington State Univ	4 years	432	
BIOCHEMISTRY	MA PhD	BS in science or related field	Univ of Washington	**	432	See footnote 2
BIOPHYSICS	MS	BS in physics or	Univ of Washington	**	432	See footnote 3
	PhD	related field	Washington State Univ	**	432	See footnote 4
BIOSTATISTICS (Biomathematics)	MS PhD	BS in related field	Univ of Washington	**	432	See footnote 5
BIOMEDICAL PHOTOGRAPHY (Medical)	AA	High school or equiv	Bellevue Community College	2 years	210	Univ of Washington, Virginia Mason Hospitals
CARDIO-PULMONARY TECHNOLOGY	AA	High school or equiv	Spokane Community College	2 years	210	Various area hospitals
CENTRAL SUPPLY TECHNICIAN		18 years of age or High School graduate	Highline Community College	6 months	140	Burien General, Univ of Washington, Valley General and Veterans Hospitals
CLINICAL PSYCHOLOGY	BS	High school graduation	Univ of Washington	4 years	432	MA and PhD program available
	BS	" "	Washington State Univ	4 years	432	MA program available
	BS	" "	Western Wash State College	4 years	432	MA program available See footnote 6
DENTISTRY	DDS	2 years college	Univ of Washington	4 years	570	Additional work toward an MS is available, as well as continuing education program
DENTAL ASSISTING	Certificate	High school or equiv	Edmonds Community College	9 months	210	Univ of Wash Dental School, Veterans Hospital and Fircrest School Dental Clinic
	Certificate	" "	Seattle Central Community College	9 months	210	USPHS Hospital, Univ of Wash Dental School, Fircrest School Dental Clinic
	Certificate	" "	Spokane Community College	9 months	210	Dental offices
	Certificate	" "	L.H. Bates Vocational-Technical Institute	11 months	**	
	Certificate	" "	Bellingham Vocational-Technical School	9 months	**	Local dental offices
	Certificate	" "	Clover Park Education Center	9 months	**	Madigan General Hospital
	Certificate	" "	Kinman Business University	9 months	1585	Cost is for total program
	Certificate	" "	Northwest College for Medical and Dental Assistants	4 months	**	
	Certificate	**	Chase Inc.	**	**	
	Certificate	**	Washington College of Business	**	**	
	Certificate	**	Seattle Dental Assistants and Technicians	**	**	
DENTAL HYGIENE	BS	2 yrs pre-dental hygiene	Univ of Washington	4 years (including pre-professional)	570	
	BS	2 yrs pre-professional	Walla Walla College	4 years	**	Univ of Oregon Clinic, Portland Adventist Hosp
	BS	2 yrs pre-professional	Eastern Washington State College	4 years (including pre-professional)	570	
	AA	High school or equiv (2.00 gpa plus aptitude test required)	Clark Community College	2 years	210	Veterans Hosp, Vancouver
	AA	" "	Yakima Community College	2 years	210	Various
	AA	" "	Shoreline Community College	2 years	210	Veterans Hosp, Fircrest Dental Clinic
DENTAL TECHNICIAN	AA	" "	Seattle Central Community College	20 months	210	USPHS Hospital
	AA	" "	L.H. Bates Vocational-Technical Institute	22 months	210	Univ Wash Dental School
DIETETICS (Dieticians)	BS	High School or equiv	Washington State Univ	4 years	432	Graduate degrees possible, Internship extra

PROGRAM	TYPE OF DEGREE OR CERTIFICATE	BASIC ENTRANCE REQUIREMENTS	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	ANNUAL TUITION	COMMENTS AND AFFILIATIONS
ENVIRONMENTAL HEALTH						
Environmental Health	BS	High school graduation	Univ of Washington	4 years	432	MA program available
Sanitarian	BS	High school or equiv	Washington State Univ	4 years	432	
Ecological Systems Analyst	BS	" "	Western Washington State College	4 years	432	
Environmental Control	BS	" "	Western Washington State College	4 years	432	
Environmental Planning	BS	" "	Western Washington State College	4 years	432	
EXECUTIVE HOUSEKEEPER						See footnote 7
FOOD SERVICE						See footnote 8
HEALTH EDUCATION						See footnote 9
INHALATION THERAPY:						
Therapist	AA	High school graduation	Univ of Washington	2 years	432	
	AA	High school or equiv	Highline Community College	2 years	210	Children's Orthopedic, Harborview, Univ of Wash and Veterans Hospitals; Fircrest School
	AA	" "	Spokane Community College	2 years	210	St. Lukes, Deaconess, Sacred Heart Hospitals
	**	**	Yakima Valley Hospital	24 months	**	Yakima Valley Hospital
Technician	Certificate	High school or equiv	Seattle Central Community College	12 months	210	Swedish, Virginia Mason, USPHS Hospitals
	Certificate	" "	Tacoma Community College	12 months	**	St. Joseph's Hospital
MEDICAL LABORATORY TECHNOLOGY						
Medical Technician	BS	2.5 High School gpa	Central Wash State College	4 years (incl pre-professional)	360	
	BS	3 years pre-professional in Arts & Sciences	Univ of Washington	"	360	Virginia Mason, Univ of Washington Hospitals
	BS	2 years pre-professional	Washington State Univ	"	360	
	BS	High school graduation	Eastern Wash State College	4 years	432	
	BS	High school graduation	Pacific Lutheran	4 years	**	
	BS	" "	Seattle Pacific	4 years	**	
	BS	" "	Walla Walla College	4 years	**	
	BS	" "	Whitman College	4 years	**	
	BS	" "	Whitworth College	4 years	**	
	Unknown	High School or equiv	Wenatchee Valley Community College	36 months	**	St. Anthony Community Hospital
	**	**	Gonzaga	**	**	Sacred Heart Medical Center
	BS	Special requirements from High School courses	Univ of Puget Sound	4 years (3 yr course & 1 yr intern)	1800	Tacoma General, St. Joseph's Hospitals
	BS	" "	Seattle University	"		Providence Hospital
Laboratory Technician	AA (eligible for certificate, has assistant's exam)	High School or equiv	Shoreline Community College	21 months	210	Waldo, Northwest, West Seattle, and Ballard Hospitals, Blood Bank
Laboratory Assistant	Certificate	High School or equiv	Clover Park Education Center	12 months	210	Local laboratories
Cytotechnology	Certificate (internship)	**	The Doctor's Hospital	6 months	**	
Bio-laboratory Technician	AA	Special requirements from High School courses	Shoreline Community College	2 years	210	Waldo, West Seattle and Ballard Hospitals
Medical Assistants	Certificate	High School graduation	Clover Park Education Center	7 months	140	**
	AA	" "	Lower Columbia Community College	18 months	210	St. John's Hospital
	AA	" "	North Seattle Community College	18 months	210	Local doctor's offices
	AA	" "	Edmonds Community College	18 months	210	Univ of Washington, Stevens Memorial Hospitals
	Certificate	" "	Kinman Business Univ	12 months		
	Certificate	" "	Northwest College for Medical and Dental Assistants	6 months	**	**
MEDICAL RECORDS:						
Librarians	BS	" "	Seattle University	4 yrs incl 2-9 mo internship		Providence, Virginia Mason Hospitals
	BS	" "	Whitworth	4 yrs incl internship		Providence Hospital
Technicians	AA	" "	Shoreline Community College	2 years	210	Stevens Memorial, USPHS, Seattle General and Harborview Hospitals
	Certificate	" "	Spokane Community College	1 year	210	Area hospitals
	--	--	Memorial Hospital, Inc, Quincy Valley	2 months		Memorial Hospital, inc.
	--	--	St. Joseph's Hospital	24 months		(May be affiliated with Univ Puget Sound)

PROGRAM	TYPE OF DEGREE OR CERTIFICATE	BASIC ENTRANCE REQUIREMENTS	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	ANNUAL TUITION	COMMENTS AND AFFILIATIONS
MENTAL HEALTH:						
Mental Health Technician	AA	High school or equiv	Ft. Steilacoom Community College	2 years	210	Western State Hospital
Mental Retardation Technician	AA	" "	Ft. Steilacoom Community College	2 years	210	Rainier School
NURSING:						
Baccalaureate Programs	BS	as advised for the Univ or RNs with AA Degree	Univ of Washington	4 years	360	
	BS	High school or equiv	Walla Walla College	4 years		Univ of Oregon Clinical, Portland Adventist Hospital
	BS	" "	Pacific Lutheran College	4 years		
	BS	" "	Seattle Pacific	4 years		
	BS	" "	Seattle University	4 years		Area hospitals
	BS	" "	Spokane Center	4 years		
Diploma Programs	Diploma	High school graduation	Deaconess Hospital	3 years	**	
	Diploma	" "	Sacred Heart	3 years	**	
	Diploma	" "	St. Joseph's Hospital	3 years	**	
	Diploma	" "	Tacoma General	3 years	**	
	Diploma	" "	Central Wash Deaconess Hosp	3 years	**	
Associate Degree Programs	AA	" "	Bellevue Community College	2 years	210	Ballard, Northgate, Northwest, Seattle General Hospitals
	AA	" "	Olympic Community College	2 years	210	Area hospitals
	AA	" "	Everett Community College	2 years	210	Everett General, Stevens Memorial, Providence Hosp
	AA	" "	Lower Columbia Community College	2 years	210	
	AA	" "	Columbia Basin Community College	2 years	210	
	AA	" "	Highline Community College	2 years	210	Area hospitals
	AA	High School graduation	Shoreline Community College	2 years	210	Ballard, Northgate, Northwest, Seattle General Hosp
	AA	" "	Clark College	2 years	210	**
	AA	" "	Seattle Central Community College	2 years	210	Doctor's Hospital
	AA	" "	Spokane Community College	2 years	210	Area hospitals
	AA	" "	Tacoma Community College	2 years (3rd yr for RN)	210	St. Joseph's Hospital
	AA	" "	Walla Walla Community College	2 years	210	**
	AA	" "	Yakima Community College	2 years	210	**
Vocational Practical Nursing	Certificate	Age 18-55, 10th grade	Centralia Community College	10½ months	280	Centralia General, St. Helen's Hospitals
	Certificate	High school or equiv	Big Bend Community College	12 months	280	
	Certificate	" "	Everett Community College	12 months	280	Stevens Memorial, Providence Hospitals
	Certificate	" "	Grays Harbor Community College	11 months	280	St. Joseph's, Grays Harbor Community Hospitals
	Certificate	" "	Peninsula Community College	10½ months		Olympic Memorial, Crestwood Nursing Home, Angeles Health Care Center
	Certificate	" "	Walla Walla Community College	12 months	280	**
	Certificate	" "	Yakima Valley Community College	11 months	50*	**
	Certificate	" "	Spokane Community College	11 months	280	Area hospitals
	Certificate	" "	Seattle Central Community College	12 months	280	Providence, Swedish, Virginia Mason Hospitals, Fircrest Center, Seattle Convalescent Center
	Certificate	" "	North Seattle Community College	11 months	280	Northwest, Northgate, Ballard Hospitals, Firlands Sanatorium, Fircrest School, Ballard Convalescent Hosp
	Certificate	" "	Clark Community College	12 months	280	**
	Certificate	" "	Columbia Basin Community College	11 months	210	**
	Certificate	" "	Lower Columbia Comm College	12 months	210	Local hospitals
	Certificate	" "	Olympic Community College	11 months	210	Local hospitals
	Certificate	" "	Clover Park Education Center	11 months	**	Lakewood General, Madigan General (military) Hospitals
	Certificate	" "	L.H. Bates Vocational-Technical Institute	12 months	**	
	Certificate	" "	Lower Yakima Valley Practical Nurse Program	12 months	**	Local hospitals
	Certificate	" "	Clarkston School of Practical Nursing	12 months	**	Tri-State Memorial Hospital, Rest Haven Convalescent Center Newport Community Hosp
Nurses Aide	Certificate	" "	Spokane Community College	3 months	70	Area hospitals
	Certificate	" "	Lower Columbia Comm College	3 months	70	Cowlitz General Hospital (combined classes)
	Certificate	" "	Big Bend Community College	2½ months	70	Quincy Hospital
	Upgrading course		Grays Harbor Comm College	10 weeks	**	**
	Certificate	" "	Clover Park Education Center	4½ months	**	**
	Certificate	" "	L.H. Bates Voc-Tech Institute	3 months	**	**
	Certificate	" "	Lower Yakima Valley Practical Nurse Program	2 months (240 hours)	**	Hillcrest, Sunny Haven Nursing Homes; Grandview and Sunnyside Hospitals

PROGRAM	TYPE OF DEGREE OR CERTIFICATE	BASIC ENTRANCE REQUIREMENTS	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	ANNUAL TUITION	COMMENTS AND AFFILIATIONS
NURSING: (contd)						
Nurses Aide	--	--	Elma High School	9 months	**	Mark Reed Hospital, Oakhurst Infirmary
	--	--	Arlington High School	9 months	**	Cascade Valley Hospital, Arlington Manor Nursing Home
	--	--	Quincy High School	9 months	**	Quincy Hospital
	--	--	Ephrata High School	9 months	**	Columbia Basin Hospital, nursing homes, M.D. offices
	--	--	Omak High School	9 months	**	Midvalley Hospital, Tillicome House, Brewster Hospital
	--	--	Odessa Consolidated School District #105	9 months	**	(offered every 2 years to high school seniors)
	--	--	Sunnyside School District #201	9 months	**	Valley Memorial, Sunnyside General
	--	--	St. Mary's Hospital-Walla Walla	1 month	**	
	--	--	Memorial Hospital, Inc.	2 months	**	
	--	--	Grays Harbor Community College	1½ months	**	
	--	--	Okanogan-Douglas County	3 months	**	
	--	--	Children's Orthopedic Hosp	1 month	**	
Practical Nursing	**	**	Skagit Valley College	10 months	**	Skagit Valley Hospital
	**	**	Wenatchee Valley College	12 months	**	Central Wash Deaconess, St. Anthony's Comm Hospitals
Surgical Technician	Certificate	unknown	Seattle Central Comm College	6 months	**	Harborview, Northwest, Swedish, Virginia Mason Hospitals
	**	unknown	Memorial Hospital, Inc.	3 months	**	
	**	unknown	Holy Family Hospital	12 months	**	
Operating Techniques for RN's		RN	Highline Community College	2½ months	**	
Nurse Anesthesia	Certificate	RN or 2 yrs Nurse's school	St. Peter's Hospital School of Anesthesia	18 months	$100-books	
Ward Clerk (Nursing Unit Clerical Asst)	Certificate	High school or equiv	Clover Park Education Center	4 months		
	Certificate	" "	Seattle Community College			
PHARMACY	BS	1 year pre-professnl	Washington State University	3 years (not inc pre-professnl)	570	
	BS	1 year pre-professnl	University of Washington	5 years (incl pre-professnl)	432	(NOTE: Advanced degrees are available; MS and Ph.D. with emphasis on Pharmaceutical Chemistry, Pharmacognosy, Pharmacy and Pharmacy Administration)
PHYSICIAN	MD MS PhD	2 years pre-medical (preference given to additional college completions)	University of Washington	MD 4 years	570	Including post-medical degree work in such areas as: Anesthesiology, Neurological Surgery, Obstetrics and Gynecology, Opthalmology, Orthopedics, Otolaryngology, Pediatrics, Physical Medicine & Rehabilitation, Psychiatry, Radiology, Surgery and Urology.
RADIOLOGIC:						
Radiological Technology	AA	High school or equiv	Bellevue Comm College	3 years (incl 1 yr externship)	210	Local hospitals See footnote 10
Radiological Technician	AA	" "	Tacoma Comm College (Co-op program)	2 years	210	Tacoma General and St. Joseph's Hospitals
	--	--	Wenatchee Valley College	24 months	210	St. Anthony's, Central Wash Deaconess Hospitals
	AA	" "	Yakima Valley College	33 months (plus $100 for equipment, less 3rd year)	210	Area hospitals
	Clinical affiliation only		Oregon Technical Institute	12-15	**	Skagit Valley and St. Lukes General Hospitals
	**	**	Garfield County Memorial Hospital	unknown	**	
	**	**	Swedish Hospital	24 months	**	
Radioisotope Technician (X-ray Therapy)	**	**	Swedish Hospital	12 or 24 months	**	
Nuclear Medicine Technician	**	**	Swedish Hospital	12 months	**	
REHABILITATION:						
Occupational Therapy	BS	2 years pre-professnl	University of Washington	4 years plus clinical experience	432	University Hosp et al See footnote 11
	BS	2 years pre-professnl	University of Puget Sound	4 years	1800	
Occupational Therapy Assistant	AA	High school or equiv	Green River Community College	2 years	210	
Physical Medicine and Rehabilitation	MS	BS	University of Washington	4 years	432	
Physical Therapy	BS	2 years pre-professnl	University of Washington	4 years plus clinical experience	432	See footnote 11
Physical Therapy Assistant	AA	High school or equiv	Green River Community College	2 years	210	

PROGRAM	TYPE OF DEGREE OR CERTIFICATE	BASIC ENTRANCE REQUIREMENTS	INSTITUTION OFFERING PROGRAM	LENGTH OF PROGRAM	ANNUAL TUITION	COMMENTS AND AFFILIATIONS
SPEECH PATHOLOGY AND AUDIOLOGY						See footnote 12
VETERINARY SCIENCE	DVM	2 year pre-professnl	Washington State Univ	6 years (incl pre-professnl)	360	NOTE: Graduate programs leading to MS and Ph.D. in Veterinary Medicine are available
Veterinary Assistant	AA	High school graduation	Fort Steilacoom Community College	2 years	210	Affiliated with clinical service in local veterinary clinics
MEDICAL SECRETARY, CLERKS and RECEPTIONISTS (including other hospital and office workers)	Certificate	Generally high school or equiv	Available through the following community colleges: Big Bend, Columbia Basin, Fort Steilacoom, Lower Columbia, Skagit Valley, Wenatchee, Walla Walla, Yakima, Everett, Edmonds, Clark, Highline, Seattle, and Tacoma	Programs vary in length, cost and starting times. Some high school business programs give enough skills to start in a lower position and earn promotion		Available through the following Private Vocational Schools: ITT, Peterson, Auerswald, CTC Education Systems, Professional Secretarial Institute, Inc., Chase Business College, Modern Business College, Skagit Success Business College, Careers, Inc., Everett Business College, Yakima Business College, Inc., Knapp Business College, and Kinman Business University. (The list above is not complete due to a lack of information obtained on the survey questionnaire).

* Tuition only, books, supplies and basic living expenses are not included
** This information was not supplied and/or not available from either the school catalog or brochure

FOOTNOTES

1. Often and properly called microbiology, Bacteriology programs are offered that lead to a Bachelor of Science, Master of Science in Bacteriology (or Microbiology) and Doctor of Philosophy. These programs often lead the student to the fields of Medicine, Medical Technology and Public Health, among others. Persons interested in obtaining further information concerning a career in this field should consult with the schools listed: University of Washington, School of Medicine, and Washington State University, Department of Bacteriology and Public Health.

2. These programs are offered as graduate programs at the University of Washington with both a Master of Science and a Doctor of Philosophy available.

3. Bio Physics: A Master of Science and Doctor of Philosophy program is offered at the University of Washington. Students may elect Biophysics as a minor in certain programs at the Washington State University. Interested persons should contact these schools for further information.

4. Graduate Programs: Various graduate programs are available at different schools. Among the areas of graduate study are: Biochemistry, Biological Structure, Pathology (undergraduates would major in Medical Technology), Pharmacology (not a major program), Preventive Medicine, Biomedical History (not a major program), and Surgery. Non-degree programs that are available include, but are not limited to, Anesthesiology, Neurological Surgery, Obstetrics and Gynecology, Orthopedics, Ophthalmology, Otolaryngology, Pediatrics, Psychiatry, Radiology and Urology

5. Biostatistics (Biomathematics) are offered as graduate programs at the University of Washington with both a MS and Ph.D. available.

6. Clinical Psychology: Baccalaureate programs are offered in many of the four year colleges throughout the State of Washington. Graduate study leading to a Master of Science/Arts is available through the University of Washington, Washington State University and Western Washington State College. Both State Universities offer a Doctor of Philosophy in Psychology. For further information, please contact the school of your choice.

7. Executive Housekeeping: Special Baccalaureate programs are available at the University of Washington; however, many positions of this sort are filled by persons with majors in Business Administration and Home Economics, as well as other related fields.

8. Food Service: Many of these positions are presently filled by persons with job experience rather than formal training; however, Bellevue Community College specifically trains students in institutional food service. This two year program leads to an Associate of Applied Arts degree.

9. Health Education: Persons desiring to teach Health Education Classes in the public schools should contact any of the four year institutions that train teachers to find the requirements and admission information. Those students wishing to major in Public Health should contact the Department of Public Health and Bacteriology at Washington State University or the School of Public Health, University of Washington.

10. A graduate program leading to a Master of Science of Radiological Sciences is offered at the University of Washington. Those wishing information concerning this field should contact the Chairman of Radiological Sciences Group, University of Washington.

11. Graduate programs in Occupational Therapy and Physical Therapy are offered at the University of Washington and are titled Master of Science in Physical Medicine and Rehabilitation.

12. The Master's Degree is the minimum requirement for certification by the American Speech and Hearing Association. This certification is necessary for many positions in the area of speech and hearing. Programs for graduate study are available through the University of Washington, Washington State University, Central Washington State College, among others. Doctor of Philosophy programs are available at both state universities.

INSTITUTIONAL NAMES AND ADDRESSES

The following list contains the names and addresses of all of the institutions in the State of Washington that provide training in one or more of the health occupations.

FOUR-YEAR COLLEGES AND UNIVERSITIES

Central Washington State College
Ellensburg 98926

Eastern Washington State College
Cheney 99004

Gonzaga University
East 502 Boone
Spokane 99202

Pacific Lutheran University
South 121st and Park
Tacoma 98447

Seattle Pacific College
509 West Bertona
Seattle 98119

Seattle University
12th and East Columbia
Seattle 98122

University of Puget Sound
1500 North Warner
Tacoma 98416

University of Washington
Seattle 98105

Walla Walla College
340 South Park
College Place 99324

Washington State University
Pullman 99163

Western Washington State College
Bellingham 98225

Whitman College
Walla Walla 99362

Whitworth College
Spokane 98118

COMMUNITY COLLEGES AND VOCATIONAL-TECHNICAL INSTITUTES

Bellevue Community College
3000 - 145th Place S.E.
Bellevue 98004

Bellingham Vocational-Technical Institute
Bellingham 98225

Big Bend Community College
Highway 17 and Nelson Road
Moses Lake 98837

Centralia College
P. O. Box 639
Centralia 98531

Clark College
1800 East McLoughlin Blvd.
Vancouver 98663

Clover Park Vocational-Technical School
4500 Steilacoom Blvd. S.W.
Lakewood 98499

Columbia Basin Community College
2600 North Case Street
Pasco 99301

Edmonds Community College
20000 - 68th West
Lynnwood 98036

Everett Community College
801 Wetmore Avenue
Everett 98201

Fort Steilacoom Community College
Lakewood Center
Tacoma 98499

Grays Harbor College
College Heights
Aberdeen 98520

Green River Community College
12401 S.E. 320th Street
Auburn 98002

Highline Community College
Box 1000
2660 South 240th
Midway 98031

L. H. Bates Vocational-Technical Institute
1101 South Yakima
Tacoma 98405

Lower Columbia College
1600 Maple
Longview 98632

Olympia Vocational-Technical Institute
Olympia 98501

Olympic College
15th and Chester
Bremerton 98310

Peninsula College
Boulevard and Ennis
Port Angeles 98362

Seattle Community College
Central Campus
1718 Broadway
Seattle 98122

Seattle Community College
North Campus
9600 Burke Avenue North
Seattle 98103

Seattle Community College
South Campus
5925 - 3rd South
Seattle 98108

Shoreline Community College
16101 Greenwood Avenue North
Seattle 98133

Skagit Valley College
2405 College Way
Mount Vernon 98273

Spokane Community College
West 3410 Fort George Wright Drive
Spokane 99204

Tacoma Community College
5900 South 12th Street
Tacoma 98365

Walla Walla Community College
340 South Park
Walla Walla 98362

Wenatchee Valley College
1300 Fifth Street
Wenatchee 98801

Yakima Valley College
16th and Nob Hill Boulevard
Yakima 98902

SCHOOL DISTRICTS

Arlington High School
South French
Arlington 98223

Clarkston Public Schools
847 - 6th Street
Clarkston 99403

Elma High School
Elma 98541

Ephrata High School
415 C. Street N.W.
Ephrata 98823

Grandview School District
West 2nd and Euclid
Grandview 98930

Odessa High School
102 East 3rd
Odessa 99159

Omak High School
320 West 2nd
Omake 98841

Sunnyside High School
16th and Edison
Sunnyside 98944

Table 2 contains a listing, with addresses, of the hospitals that indicated training programs in the health occupations. Many hospitals conduct only the clinical training for educational institutions, while others have programs which are conducted wholly within the hospital itself. Still others have both affiliated and unaffiliated programs.

TABLE II

HOSPITAL NAMES AND ADDRESSES AND TYPES OF HEALTH OCCUPATION TRAINING PROGRAMS

HOSPITAL NAME AND ADDRESS	TYPE OF PROGRAM		
	Affiliated Program	Unaffiliated Program	Both
BALLARD COMMUNITY HOSPITAL 5409 Barnes Avenue N.W. Seattle 98107 COUNTY: King			X
BURIEN GENERAL HOSPITAL 16200 - 8th Avenue S.W. Seattle 98166 COUNTY: King	X		
CASCADE VALLEY HOSPITAL 330 South Stillaguamish Arlington 98223 COUNTY: Snohomish	X		
CENTRAL WASHINGTON DEACONESS HOSPITAL Okanogan and Kittitas Streets Wenatchee 98801 COUNTY: Chelan			X
CHILDREN'S ORTHOPEDIC HOSPITAL 4800 Sand Point Way N.E. Seattle 98105 COUNTY: King		X	
COLUMBIA BASIN HOSPITAL Southeast Boulevard Ephrata 98823 COUNTY: Grant	X		
COWLITZ GENERAL HOSPITAL P. O. Box 638 Longview 98632 COUNTY: Cowlitz	X		
DEACONESS HOSPITAL 800 West 5th Avenue Spokane 99210 COUNTY: Spokane	X		
THE DOCTORS HOSPITAL 909 University Street Seattle 98101 COUNTY: King			X

HOSPITAL NAME AND ADDRESS	TYPE OF PROGRAM		
	Affiliated Program	Unaffiliated Program	Both
GARFIELD COUNTY MEMORIAL HOSPITAL North 66 - 6th Street Pomeroy 99347 COUNTY: Garfield	Unknown		
GRAYS HARBOR COMMUNITY HOSPITAL 915 Anderson Drive Aberdeen 98520 COUNTY: Grays Harbor			X
HARBORVIEW MEDICAL CENTER 325 - 9th Avenue Seattle 98104 COUNTY: King		X	
HOLY FAMILY HOSPITAL North 5633 Lidgerwood Spokane 99207 COUNTY: Spokane			X
KITTITAS VALLEY COMMUNITY HOSPITAL 603 South Chestnut Ellensburg 98926 COUNTY: Kittitas	X		
MEMORIAL HOSPITAL, INC. Pullman 99163 COUNTY: Whitman		X	
NEWPORT COMMUNITY HOSPITAL Box 669, Newport 99156 COUNTY: Pend Oreille	X		
OKANOGAN-DOUGLAS COUNTY HOSPITAL P. O. Box 577, Brewster 98812 COUNTY: Okanogan		X	
OLYMPIC MEMORIAL HOSPITAL 939 Caroline Street Port Angeles 98362 COUNTY: Clallam	X		
PROVIDENCE HOSPITAL 500 - 17th Avenue Seattle 98122 COUNTY: King	X		
QUINCY VALLEY HOSPITAL Box 1048 Quincy 98848 COUNTY: Grant			X
SACRED HEART MEDICAL CENTER West 101 - 8th Avenue Spokane 99204 COUNTY: Spokane	X		
SKAGIT VALLEY HOSPITAL 1415 Kincaid Street Mount Vernon 98273 COUNTY: Skagit	X		

HOSPITAL NAME AND ADDRESS	TYPE OF PROGRAM		
	Affiliated Program	Unaffiliated Program	Both
ST. ANTHONY'S COMMUNITY HOSPITAL 1211 Rosewood Street Wenatchee 98801 COUNTY: Chelan	X		
ST. ELIZABETH HOSPITAL 110 South 9th Avenue Yakima 98902 COUNTY: Yakima	X		
ST. JOSEPH HOSPITAL 1812 South I Street Tacoma 98405 COUNTY: Pierce			X
ST. LUKE'S GENERAL HOSPITAL 809 East Chestnut Street Bellingham 98225 COUNTY: Whatcom	X		
ST. LUKE'S MEMORIAL HOSPITAL 711 Cowley South Spokane 99202 COUNTY: Spokane	X		
ST. MARY HOSPITAL 5th and Poplar Streets Walla Walla 99362 COUNTY: Walla Walla		X	
ST. PETER HOSPITAL 413 North Lilly Road Olympia 98501 COUNTY: Thurston		X	
SWEDISH HOSPITAL AND MEDICAL CENTER 1212 Columbia Street Seattle 98104 COUNTY: King			X
TACOMA GENERAL HOSPITAL 315 South K Street Tacoma 98405 COUNTY: Pierce	X		
TRI-STATE MEMORIAL HOSPITAL 1221 Highland Clarkston 99403 COUNTY: Asotin	X		
UNIVERSITY HOSPITAL 1959 N.E. Pacific Street Seattle 98105 COUNTY: King	X		
VALLEY MEMORIAL HOSPITAL Box 540 Sumnyside 98944 COUNTY: Yakima	X		

HOSPITAL NAME AND ADDRESS	TYPE OF PROGRAM		
	Affiliated Program	Unaffiliated Program	Both
VIRGINIA MASON HOSPITAL 1111 Terry Avenue Seattle 98101 COUNTY: King			X
WALDO GENERAL HOSPITAL 10560 - 5th Avenue N.E. Seattle 98125 COUNTY: King	X		
YAKIMA VALLEY HOSPITAL 2811 Tieton Drive Yakima 98902 COUNTY: Yakima			X

SECTION III

This section contains the enrollment and graduation figures which were gathered through the surveys of community colleges, vocational-technical schools, public school programs, hospital programs, and private vocational school programs. Some limitation of the data was caused by the fact that mail-back questionnaires had not been returned.

Table III represents the enrollment and graduation figures of the community colleges and vocational-technical institutions in Washington state. Also included were the figures obtained from the high school districts that have health training programs such as Nurses Aide Training. While the most striking gains, in terms of percentage, came in the Dental and Rehabilitation areas, the Associate Degree nursing program showed the largest gain in numbers (265 against 184 graduates in 1970 and 1969). Nursing also appeared to have the largest number gain in enrollment (1727 in 1969, 1914 in 1970). The overall gain in the Community College and Vocational-Technical schools was 35 percent, with three areas showing fewer enrollees and graduates in 1970 than in 1969. These areas were: Medical Laboratory Assisting; Cardio-Pulmonary Technology; and Nursing Unit Clerical.

TABLE III

ENROLLMENT AND GRADUATION FIGURES WITH PERCENTAGE GAIN OR (LOSS) BETWEEN 1969 AND 1970 FOR COMMUNITY COLLEGES, VOCATIONAL-TECHNICAL SCHOOLS AND PUBLIC SCHOOL PROGRAMS

PROGRAM	ENROLLMENT 1969	ENROLLMENT 1970	GRADUATIONS 1969	GRADUATIONS 1970	PERCENT INCREASE (DECREASE) IN GRADUATIONS
DENTAL					
Dental Assistant	159	345	66	139	171
Dental Hygiene	85	111	-	52	-
Dental Laboratory Technology	45	57	10	15	50
Total Dental Programs	289	345	76	206	171
MEDICAL LABORATORY TECHNOLOGY					
Medical Laboratory Assistant	33	49	20	17	(15)
Total Medical Laboratory	33	49	20	17	(15)
NURSING					
Associate Degree Nursing	801	1007	184	265	44
Vocational Nursing (LPN)	700	620	456	485	15
Surgical Technician	-	35	-	19	-
Nurse Aide	226	252	154	187	21
Total Nursing	1727	1914	794	954	20
REHABILITATION					
Occupational Therapy Aide	42	46	8	17	113
Physical Therapy Aide	56	44	-	14	-
Total Rehabilitation	86	90	8	31	288
RADIOLOGIC					
Radiological Technician	56	81	-	14	-
Total Radiologic	56	81		14	
MENTAL HEALTH					
Mental Health Technician	12	39	-	-	-
Mental Retardation Technician	25	46	-	-	-
Total Mental Health	37	85			
MISCELLANEOUS HEALTH OCCUPATIONS					
Cardio-pulmonary Technology	40	37	15	10	(50)
Food Service Supervisor	10	12	-	-	-
Inhalation Therapy	66	134	18	24	33
Medical Office Assistant	41	42	2	27	1250
Medical Photography (Biomedical Photography)	3	8	-	-	-
Medical Record Technician	46	51	21	28	33
Nursing Unit Clerical (Ward Clerk)	36	18	30	18	(67)
Veterinary Assistant	6	44	-	-	-
Total Miscellaneous	254	357	90	115	28
TOTAL ALL PROGRAMS	2472	2921	988	1337	35

Table IV lists the hospital training programs, other than clinical experience programs for colleges and universities, and the enrollment, graduation and average length in months. Of the four institutions reporting diploma nursing programs, two have reported to be phasing out the Registered Nurse program. Most hospitals reporting training ward clerks and nurses aides indicated that the greatest portion of the training was on-the-job. One hospital reported training practical nurses as surgical technicians whenever the need for this position occurred. The hospital has not had a class for several years.

Table V indicates the enrollment figures for clinical experience programs in hospitals that are affiliated with the various colleges and universities in the area. It becomes rather obvious that the hospital training programs are most often clinical resources for the colleges and universities when the numbers of trainees in the clinical experience are more than three times those in unaffiliated programs (1970). The necessary coordination of these programs requires larger amounts of time and effort on the part of the administrative staff of the hospital.

Graduation figures were not reported for the clinical experience programs; therefore, percentages of increase could not be included in this table.

TABLE IV

HOSPITAL TRAINING PROGRAMS - ENROLLMENT AND GRADUATION FIGURES

PROGRAM	ENROLLMENT 1969	ENROLLMENT 1970	GRADUATIONS 1969	GRADUATIONS 1970	PERCENT INCREASE (DECREASE) IN GRADUATIONS
Certified Laboratory Assistant	1	1	1	-	-
Cytotechnology	1	1	1	-	-
Dietician	27	34	26	34	35
Executive Housekeeper	-	-	-	-	-
Inhalation Technician	2	2	-	-	-
Medical Record Technician	1	1	-	1	-
Medical Technology	8	11	6	12	100
Nursing:					
Diploma Program	193	212	88	86	(2)
Nurse Aide	113	107	125	116	(8)
Nurse Anesthesia	2	2	1	1	-
Surgical Technician	-	-	1	10	90
Nursing Unit Clerical	17	15	18	13	(38)
Radiologic	11	12	12	15	20
Totals	376	396	279	288	3

TABLE V

ENROLLMENT FIGURES FOR CLINICAL EXPERIENCE PROGRAMS

PROGRAM	ENROLLMENT 1969*	1970
Certified Laboratory Assistant	-	3
Hospital Executive Housekeeper	1	2
Inhalation Therapist	22	79
Inhalation Technician	-	6
Medical Record Librarian	25	30
Medical Technology	36	37
Nurse Anesthetist	3	10
Nurses Aide	21	40
Vocational Nurse (LPN)	320	268
Baccalaureate Nursing	235	909
Associate Degree Nursing	283	319
Surgical Technical	-	-
Nursing Unit Clerk	7	7
Radiologic Technology	87	93
Totals	1040	1803

* Many hospitals reported only the enrollment figures for 1970

TABLE VI

ENROLLMENT GRADUATION AND PERCENTAGE OF INCREASE OF GRADUATES IN PRIVATE VOCATIONAL SCHOOLS *

PROGRAM	ENROLLMENT 1969	1970	GRADUATIONS 1969	1970	PERCENT INCREASE (DECREASE) IN GRADUATIONS
Dental Assistant	108	219	100	165	39
Medical Assistant	124	181	115	135	15
Medical Insurance Specialist	-	1	-	-	-
Medical Receptionist	60	74	42	62	32
Medical Secretarial	117	161	78	112	30
Medical Ward Clerk (Nursing Unit Clerical)	-	2	-	-	-
Totals	409	638	335	474	29

*It should be taken into consideration that only 62 percent of the private vocational schools replied to the questionnaire after a follow-up. However, the six programs listed can be considered as representative of the programs offered by private vocational schools.

SECTION IV

STUDENT FINANCIAL AID FOR HEALTH CAREERS

Direct financial aid to students in all educational settings, particularly post-secondary training, has been a major concern for both the Federal and state governments for many years. Most of this aid is in the form of loans, grants or scholarships and employment.

Loans are categorized in four groups:

1. Federally sponsored or guaranteed loans
2. Direct Federal loans
3. Campus or institutional loans
4. Private loan funds administered by banks, loan companies or individuals

Federally insured loans have received wide acceptance from both the institutions and the banks. For students, the deferred payment schedule allowing repayment after completion of a course of study is very beneficial. Students in either degree programs or shorter certificate programs are eligible for this type of funding.

Three types of direct Federal loans are available for students considering health careers. They are: the Health Professions Student Loan, the Nursing Student Loan, and the National Defense Student Loan. These loans are attractive for their low interest rate and lenient eligibility requirements. These loans also may be repaid after completion of the training program.

Campus or institutional loans and those private loans administered by banks, loan companies or individuals generally have more restrictive requirements both for eligibility and repayment.

Grant and scholarship programs aid students to participate in training programs without the obligation of repayment. The Educational Opportunity Grant program, not exclusively for health career training, aids those students from extremely low economic backgrounds to attend either the community colleges or the four year colleges and universities.

Two programs are restricted to health careers: the Health Professions Scholarship and the Nursing Scholarship program. Both of these programs assist students of exceptional financial need to undertake a course of training in health careers.

Part-time employment opportunities have long been an accepted method of financing post secondary education. The two Federally funded programs for part-time employment are the College Work-Study Program and the Vocational Work Study Program. Both provide employment up to 15 hours per week while attending classes and up to 40 hours per week during vacation periods. Institutions must participate financially and may not use these programs to replace existing work opportunities. The services of the students may be contracted out to other non-profit agencies.

Additional information about the financial aid for students can be obtained from the director of student aid at the institution of interest.

The following table consists of a list of Federally sponsored financial aid programs and sources where additional information may be obtained. Only programs for undergraduate financial aid are included in the table. For information on Federal Student Aid programs, the book Federal Dollars for Scholars by Henry Toy, Jr. is an excellent source.

This brief description of available financial aid for students is not all inclusive. The number of sources outside of the Federal government is so numerous that inclusion here is not possible. Information about these financial aid programs can be obtained by consulting high school counselors, institutional officials and employment counselors in the local employment offices.

TABLE VII

FEDERAL STUDENT FINANCIAL AID PROGRAMS AND SOURCES OF INFORMATION

STUDENT AID PROGRAM (as of 12-70)	LOCAL CONTACT	FEDERAL CONTACT
LOAN PROGRAMS		
Health Professions Student Loan	Director of Student Financial Aid at the school of your choice	Student Loan and Scholarship Branch Bureau of Health Professions Education and Manpower Training National Institutes of Health Bethesda, Maryland 20014
Nursing Student Loan Program	As above	As above
National Defense Student Loan	As above	Loans Branch Division of Student Financial Aid Bureau of Higher Education U.S. Office of Education Department of Health, Education & Welfare Washington, D.C. 20202
Guaranteed Student Loans	As above or from your local bank	Insured Loans Branch Division of Student Financial Aid Bureau of Higher Education U.S. Office of Education Department of Health, Education & Welfare Washington, D.C. 20202
GRANT AND SCHOLARSHIP PROGRAMS		
Health Professions Scholarship Program	Director of Student Financial Aid at the school of your choice	Student Loan and Scholarship Branch Bureau of Health Professions Education and Manpower Training National Institutes of Health Bethesda, Maryland 20014
Nursing Scholarship Program	As above	As above

STUDENT AID PROGRAM	LOCAL CONTACT	FEDERAL CONTACT
GRANT AND SCHOLARSHIP PROGRAMS (contd)		
Educational Opportunity Grants	As above	Educational Opportunities Branch Division of Student Financial Aid Bureau of Higher Education U.S. Office of Education Department of Health, Education & Welfare Washington, D.C. 20202
WORK-STUDY PROGRAMS		
College Work-Study Program	Student Financial Aids Director at the school of your choice	Work Study Branch Division of Student Aid Bureau of Higher Education U.S. Office of Education Department of Health, Education & Welfare Washington, D.C. 20202
Work-Study Program (Vocational Educational Students)	As above	As above
STIPEND PROGRAMS		
Registered Medical Technologist	Obtain a list of accredited MT(ASCP) schools from the Registry of Medical Technologists, (ASCP), 710 South Wolcott Avenue, Chicago, Illinois 60612	Pathology and Allied Sciences Service (113) Veterans Administration Washington, D.C. 20420
Certified Laboratory Assistant	Obtain a list of approved CLA schools from the board of Certified Laboratory Assistants, 710 South Wolcott Avenue, Chicago, Illinois 60612	As above

STUDENT AID PROGRAM	LOCAL CONTACT	FEDERAL CONTACT
OTHER FEDERAL AID FOR STUDENTS		
Social Security Benefits	District Office of the Social Security Administration	Social Security Administration Department of Health, Education & Welfare Baltimore, Maryland 21235
Veterans Educational Benefit	Local Veterans Administration Office. If on active duty, your headquarters base	Vocational Rehabilitation & Education Programs Veterans Administration Washington, D.C. 20420

SECTION V

SUMMARY AND RECOMMENDATIONS

SUMMARY

The large number of health training programs in the State of Washington found while preparing this report was very heartening. Over fifty training programs are available. Almost all of the post-secondary institutions have at least one program and one community college, Seattle, has nine. Some secondary schools operate training programs in connection with their regular curriculum, usually during the senior year of high school. In addition, there are many informal programs carried on by professional associations and health facilities.

The needs of trained health manpower, in general, are met by one of three methods. First, when the need is for highly specialized manpower that requires extensive preparation, the four year colleges, universities, community colleges, vocational-technical institutes and hospitals carefully assess the need and the training necessary to establish the program. Second, where less formal training is needed, health facilities and community colleges supply the facility and many times the faculties for these programs. Finally, two types of programs, occupational extension and refresher courses, are set up by professional associations and/or health facilities. All of these methods aid in filling the need for well trained health personnel.

Another contributing factor to the growth of health training programs in Washington State has been the expansion of the community college system. In 1960 there was only one community college offering a health career training program; in 1970 there were 24 colleges offering about forty programs, with more planned. While the community colleges were growing in numbers, the other training facilities were also growing in the types of programs and the methods of teaching. New teaching methods included such methods as TV classes, programmed instruction where students may learn at their own speed, and film strip and movie productions to facilitate learning.

Finally, all of the training institutions as well as health facilities are showing a great deal of interest in "career ladders"; that is, enabling a person in one phase of a health career to advance to another phase by taking additional training rather than starting over at the beginning and completing the entire training course. Procedures to facilitate career ladders are currently in the developmental stage.

RECOMMENDATIONS

To assist in meeting the need for health personnel, the author makes the following recommendations:

1. A "handbook" on all health career training programs be made available to counselors in the schools and employment offices. The handbook would need updating regularly.
2. An in-depth analysis of training programs and career possibilities in the State of Washington be conducted.
3. Studies of the preparation of health career teachers be made to determine the best method of providing this training.
4. A central agency be given the responsibility of gathering and disseminating information about health occupation training programs.
5. Additional research be conducted on career ladders and the possibility of core curriculum in the health occupations.
6. Information on occupational extension, continuing education and other "informal" training programs be made available in some concise form in order that the entire health career training can be viewed at one time.
7. A financial aid handbook for health careers be developed for both the undergraduate and the post-graduate level of training.
8. A thorough study of attrition rates in the health occupation training programs in Washington be done.

9. Study the occupations of students who withdraw or drop out of health career training programs.

10. Follow-up studies of students who have completed programs in Washington be made to determine where these graduates find employment and how long they remain in the work force.

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7. Dictionary of Occupational Titles, 1965, Volume 1: Definitions of Titles Third Edition, U.S. Department of Labor, Manpower Administration, Bureau of Employment Security. U.S. Government Printing Office, Washington, D.C. 20402

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